

REMARKS

1. Request for Continued Examination

Applicant respectfully requests continued examination of the above-indicated application as per 37 CFR 1.114.

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2. Amendments to the Claims

Claim 1 is currently amended according to Fig. 4 and related paragraph [0020]. The applicant believes that currently amended independent claim 1 better fully describes and uniquely points out the key features of the claimed invention. As a result, applicant has narrowed the claim scope of currently amended independent claim 1. No new matter is introduced by such amendments.

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3. Rejection of claims 1-12:

Claims 1-12 are rejected under 35 U.S.C 103(a) as being unpatentable over U.S. Patent No. 6,736,306 to Byun et al.

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Response:

To claim the present application in a more clear and specific way, claim 1 has been amended to show the specificity and differences between the present application and Byun's patent. Currently amended claim 1 is repeated as follows.

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Claim 1 (Currently amended): A semiconductor package which is positioned on a first substrate comprising:

a second substrate having a first surface and a second surface;

a chip positioned on the first surface of the second substrate;

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a plurality of first bonding balls positioned on the second surface of the second substrate and arranged in a single row along a first direction for connecting the second substrate to the first substrate; and

at least a dummy bonding bar positioned on the second surface of the second substrate for connecting the second substrate to the first substrate and preventing the semiconductor package from inclining to one side, wherein the dummy bonding

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bar and the first bonding balls are arranged in the same line .

As the chip sizes are reduced, packages for the chips have to be reduced to satisfy the requirements of smaller package sizes. In [0006], applicant reveals the inclining problem
5 if the package only has a single row of bonding balls. Hence, the present invention solves the inclining problems of the semiconductor package, especially to a tiny semiconductor package, which only has a single row of bonding balls between the second substrate and the PCB. Consequently, at least a dummy bonding bar to stabilize the balance of the structure is disposed in the same row of the bonding balls on the second surface of the
10 second substrate.

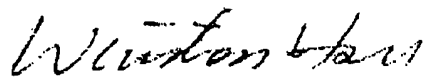
However, the bonding balls of Byun's patent are arranged in a rectangular array having at least two parallel rows. Beyond doubt, the inclining problem will not occur. Byun never discloses a package having only a single row of bonding balls or suggest a
15 solution for resolving inclining problem when the package only has a single row of bonding balls. The dummy bonding pads of Byun's patent are formed along the outer edges of the substrate enhances the join force between the first substrate 150 and the second substrate 120 and prevents the occurrence of cracks of those bonding balls. To interpret the function of joint force enhancement as the function of preventing inclining to
20 one side is a forced interpretation. Byun never infers the connection terminal 162 can be used as means of preventing inclining problems. On the other hand, the relative position between the bonding balls and the dummy bonding bars may be modified as the dummy bonding bars being disposed between the bonding balls (Fig. 7 of the present application). The position of the dummy bonding bars is not limited along the outer edges of the
25 substrate as Byun's.

According to above reasons, claim 1 should be allowable. Claims 2-12 are dependent on claim 1 and should be allowable if claim 1 is allowed. Reconsideration of claims 1-12 is politely requested.

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Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,



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- 10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)